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ABSTRACT

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WEIGHTING OF FACTORS IN RATING OCCUPATIONAL DESIRABILITY

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Subjects were asked to rate occupational desirability in two different tasks: (1) ratings based on varying levels of salary, workload, and prestige for unidentified occupations; and (2) ratings of actual occupational titles. Ratings of unidentified occupations based on the three factors could be described by an averaging model of the form supported in previous studies of information integration. However, the weighting of factors differed considerably in the two tasks; prestige was much more important in rating actual occupations than in rating unidentified occupations. Possible reasons for this were discussed.

*Paper presented at meetings of Midwestern Psychological Association, Chicago, 1976.

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Information integration models have been used to assess the desirability of city-occupation combinations (Sidowski & Anderson, 1967). The purpose of the present study is to apply the information integration approach (Anderson, 1974) to the problem of scaling occupational desirability and assessing the factors that influence ratings of occupational desirability. This was done in a two-part procedure. In Part 1, subjects were asked to rate the desirability of unidentified occupations described by varying levels of salary, workload, and prestige. Analysis of variance techniques were used to examine how the factors combine to determine desirability ratings, and to validate the rating scale. In Part 2, subjects were asked to rate each of a number of actual occupational titles on each of the three factors used in Part 1. They were then asked to rate each occupation on overall desirability. These data were used to generate a scale of desirability ratings for occupations of potential interest to college students and were analyzed using regression techniques to assess the relative weighting of factors in rating actual occupations.

Method

Forty-four students from introductory psychology classes at the University of Iowa were given the two-part self-paced task. When the subjects appeared for the experimental session they were given a sheet explaining the purpose of the study and the use of the occupational desirability scale. The occupational desirability scale was a 20 cm. line labelled "very undesirable" at one end and "very desirable" at the other end. Subjects

responded by placing a slash mark somewhere along the line. Responses were recorded on a 20 point scale, with higher numbers representing higher desirability ratings. Subjects were then given a one-page summary of the levels of the three factors: salary ($10-15,000/yr., 15-20,000/yr., 20-25,000/yr); workload (30-40 hrs./wk., 40-50 hrs./wk., 50-60 hrs./wk.); and prestige (average, above average, high). They were also given a 33-page booklet where each page represented a different hypothetical occupation described by one level of each of the three factors. The response scale was reproduced at the bottom of each page. The first six pages were practice trials which were a sample taken from the range of possible combinations, and the remaining 27 were all possible combinations of the three levels of the three factors. When the subject finished this booklet he was given the first booklet of Part 2.

In Part 2, the subjects were first given a booklet that contained 27 actual occupations, in random order, that were thought to represent possible occupational choices for college graduates. Some of the occupations had been used in previous research (Dawson & Brinker, 1971). Below the occupational titles were spaces for the subjects to rate each occupation on the three factors used in Part 1. Four alternatives were available for each factor, the three used in Part 1, and one labeled "other" where the subject could write in any other value. When subjects finished this booklet they were given another booklet with the same occupations and asked to rate the desirability of each on the same scale they had used in Part 1. They were not allowed to consult their ratings on the factors salary, workload, and prestige when rating occupational desirability. They were also asked to list other factors that might have influenced their desirability ratings.

Results

The data from Part 1--ratings of hypothetical occupations--are summarized in Figure 1. The near parallelism of the lines in each panel suggest that an additive model can adequately describe these data. However, the small departures from parallelism were systematic. The lines for different levels of workload tend to converge at low levels of salary. One parsimonious interpretation of this set of findings is that ratings are based on an averaging of the factors salary, workload, and prestige, where the less favorable levels of salary and workload have a greater weight than the more favorable levels. Similar patterns of results—i.e., averaging of stimulus factors, with the more unfavorable levels receiving greater weight--have been found in information integration studies ranging from personality impression formation (Levin, Wall, Dolezal, & Norman, 1973), to judgments of criminal offences (Oden & Anderson, 1971). The systematic nature of the present findings and their commonality with previous studies tend to support the validity of the present scale of occupational desirability.

The significant sources of variance for Part 1 were as follows: Salary, $F(2, 86) = 75.84$; Workload, $F(2, 86) = 109.20$; Prestige, $F(2, 86) = 26.26$; Salary X Workload $F(4, 172) = 4.59$. Workload had a slightly larger effect than salary; prestige had a much smaller effect and did not enter into any significant interactions. The Salary X Workload interaction represented only .4% of the variance, but as noted above,has theoretical significance. Using methods developed elsewhere (Levin, Kim, & Corry, 1976; Norman, 1976), the relative weights of the three factors were computed to be .37, .50, and .13 for salary, workload, and prestige, respectively.

The data for Part 2 are summarized in Table 1 and Figure 2. The major finding illustrated in Table 1 is that prestige had a much greater effect in rating actual occupational titles than in rating unidentified occupations. Also, workload had a considerably reduced influence in rating actual occupational titles. Regression analysis confirmed that the relative importance of the three factors was considerably changed in the two parts of the study. Prestige had the largest effect, $F(1, 23) = 111.77$. None of the additional (non-common) sums of squares contributed by the other main effects and interactions reached statistical significance. This was due in large part to the intercorrelations between the three factors. These were as follows: .87 for salary and prestige, .55 for salary and workload, .37 for prestige and workload. The correlations between each factor and the desirability ratings were as follows: salary .82, workload .41, prestige .91. It appears that prestige ratings were heavily influenced by salary and that, in this context, desirability and prestige were nearly synonymous.

An inspection of the specific ratings in Table 1 reveals that salary ratings are ordered as one might expect and are relatively accurate given the alternatives that subjects were asked to use. Workload ratings contained some surprises. Teaching-related occupations--college professor, high school counselor, high school teacher--were rated as having relatively low workloads. The same is true for judge and linguist. These are occupations in which "preparation time" would be a major component, but the college students who served as subjects apparently did not view this as being as extensive as would those who are actually in these occupations.

On the other hand, Iowa students rated farmer and physician as the most time-consuming occupations and this may reflect a rural background. Prestige ratings were the highest for professions such as physician, lawyer, architect, college professor, and (somewhat surprisingly) state senator. Prestige ratings were lowest for sales jobs and plumber, but were also low for farmer, social worker, high school teacher, and high school counselor. (There was thus a big gap in perceived prestige between high school and college teachers.)

The occupational desirability ratings scaled in Figure 2 reveal several distinct clusters. Physician and lawyer are at the top; then architect and college professor; then most of the remaining occupations appear in array; but plumber, police officer, car salesman, and salesman (small store) are clearly at the low end of the desirability scale. Dawson and Brinker (1971) found more clusters than the present study but these clusters were not as distinct as the ones in the present study.

Discussion

The difference in the weighting of factors in two different contexts could represent a problem in the development of judgmental models based on the experimental manipulation of stimulus factors. Ebbesen and Konecni (1975) reported that court judges' decisions in setting bail were quite different for hypothetical cases based on factorial manipulation of stimulus factors than for actual cases acted on by these judges. In the present study, ratings of occupational desirability were different for actual occupational titles than for unidentified occupations. Ebbesen and Konecni concluded that simulation and controlled laboratory research may be

inappropriate for studying decision-making processes. However, there are several reasons why the pattern of results differed in the two parts of the present study and some of these may apply to the Ebbesen and Konečni study.

There were undoubtedly factors other than salary, workload, and prestige which influenced the ratings in Part 2. A questionnaire administered to the subjects in this study and in a subsequent study revealed that the following additional factors are judged to be important in rating occupational desirability: interest in the type of work, independence one is allowed, benefit to society, and the people with whom one works. However, the procedure of asking subjects to rate each occupation on salary, workload, and prestige prior to rating occupational desirability would have served to make these particular factors salient. Furthermore, an R^2 of .82 was obtained in the regression analysis, indicating that these three factors accounted for a large proportion of the variance.

The problem of other factors entering actual bail settings could have been present in the Ebbesen and Konečni study. When a judge is listening to the district attorney and the defense attorney, he also has some knowledge of these people and their past recommendations. One could increase or decrease the weight given to another's information based on how credible that individual's information has been in the past.

Another possible reason for differences obtained in the two parts of the present study is the change in the range and distribution of values for the three factors. A greater range for the prestige factor and a smaller range for the workload factor in Part 2 could account in part for

the different weighting functions in the two parts. However, the biggest stimulus difference between Parts 1 and 2 is the different combinations of the three factors. The independent manipulation of factors in Part 1 led to some unusual combinations--e.g., high prestige and low salary--which were not represented by any of the actual occupations in Part 2. While the inclusion of such unusual combinations could be important for understanding the process of scaling occupational desirability, it may have led subjects to place less credence on the prestige factor in Part 1 since it is the most ambiguous of the three factors. "Prestige" may have more concrete meaning when anchored to a particular occupational title. This could also have been a problem in the Ebbesen and Konečni study--e.g., a long prior record combined with the defense attorney's recommendation for a very low bail could have led to discounting the defense attorney's recommendations.

When subjects defined the combinations in Part 2, the three factors were highly intercorrelated. This was especially true for prestige and salary. Thus, although prestige accounted for the largest proportion of the variance, if prestige was not used as a factor, salary would account for a large proportion of the variance in desirability ratings.

It is clear that more research is needed to assess the theoretical significance of the context effects found in the present study. Such research might include a closer matching of the combination of factors used to characterize unidentified and actual occupations, and additional manipulations--such as varying the number of rating factors--aimed at discriminating between alternative models of how occupational desirability

is rated. Experimental manipulations are crucial for understanding underlying processes in human decision making, but their usefulness is directly related to the generalizability of these processes to realistic decision making situations.

References

Anderson, N. H. Cross-task validation of functional measurement. Perception & Psychophysics, 1972, 12, 389-395.

Anderson, N. H. Information integration theory: A brief survey. In D. H. Krantz, R. C. Atkinson, R. D. Luce, & P. Suppes (Eds.) Contemporary developments in mathematical psychology. Vol. 2. San Francisco: Freeman, 1974.

Dawson, W. E., & Brinker, R. P. Validation of ratio scales of opinions by multi-modality matching. Perception & Psychophysics, 1971, 9, 413-417.

Ebbesen, E. B., & Konečni, V. J. Decision making and information integration in the courts: The setting of bail. Journal of Personality and Social Psychology, 1975, 32, 805-821.

Levin, I. P., Kim, K. J., & Corry, F. A. Invariance of the weight parameter in information integration. Memory & Cognition, 1976, 4, 43-47.

Levin, I. P., Wall, L. L., Dolezal, J. M., & Norman, K. L. Differential weighting of positive and negative traits in impression formation as a function of prior exposure. Journal of Experimental Psychology, 1973, 97, 114-115.

Norman, K. L. A solution for weights and scale values in functional measurement. Psychological Review, 1976, 83, 80-84.

Oden, G. C., & Anderson, N. H. Differential weighting in integration theory. Journal of Experimental Psychology, 1971, 89, 152-161.

Sidowski, J. B., & Anderson, N. H. Judgments of city-occupation combinations. Psychonomic Science, 1967, 7, 279-280.

Footnote

[1]The authors wish to express their appreciation to Norman H. Anderson and Milton E. Rosenbaum for suggesting the possibility of using information integration methodology to investigate occupational desirability.

Figure Captions

1. Mean desirability ratings for Part 1.

2. Mean desirability ratings for occupations used in Part 2.

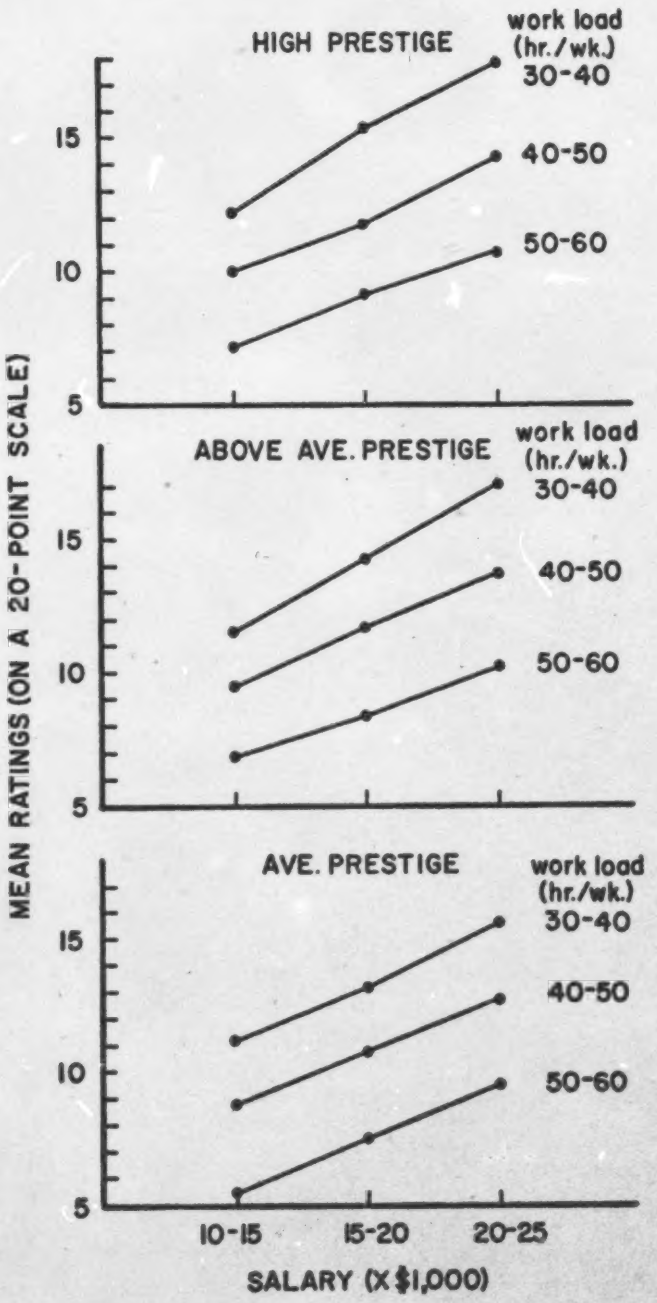
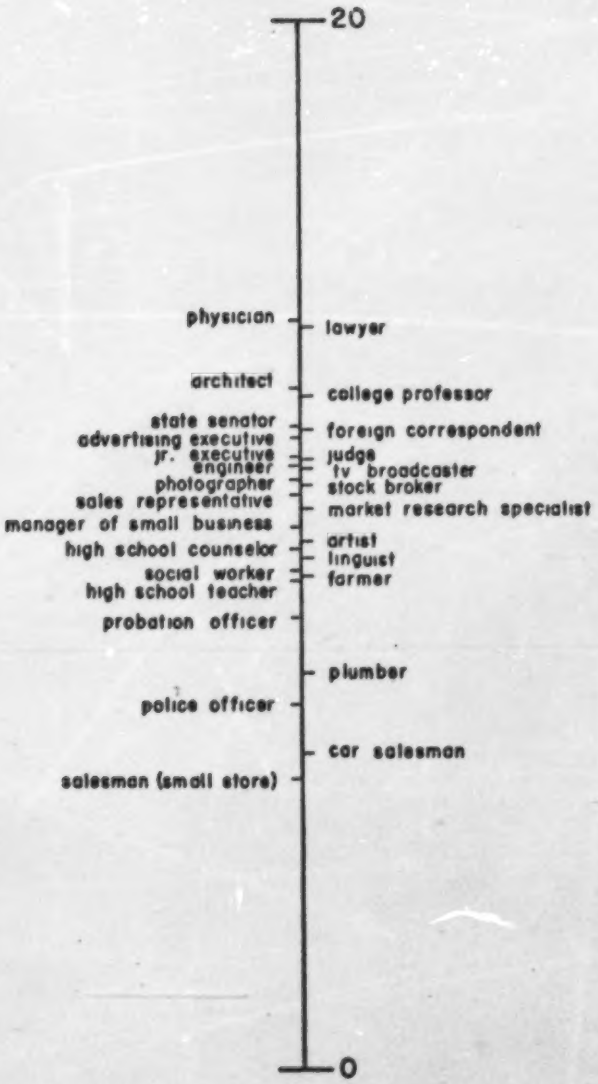

HIGH PRESTIGE
work load (hr./wk.)
30-40
40-50
50-60
ABOVE AVE. PRESTIGE
AVE. PRESTIGE
MEAN RATINGS (ON A 20-POINT SCALE)
15
10
5
10-15
15-20
20-25
SALARY (X $1,000)

TABLE 1

Mean Ratings for Occupations in Part 2

Occupation Title	Mean Salary Rating (x $1,000/yr.)	Mean Workload Rating (hr./wk.)	Mean Prestige Rating*	Mean Desirability Rating (20 point scale)
Advertising Executive	20.45	45.45	2.25	12.09
Architect	21.48	45.45	2.59	13.11
Artist	14.09	44.55	1.77	10.11
Car Salesperson	14.43	40.00	.98	6.09
College Professor	18.52	41.36	2.41	12.89
Engineer	19.89	43.64	2.23	11.59
Farmer	17.02	54.52	1.21	9.45
Foreign Correspondent	18.92	45.80	2.33	12.25
High School Counselor	13.98	38.18	1.27	9.98
High School Teacher	13.66	40.35	1.23	9.39
Judge	18.75	39.55	2.32	11.70
Jr. Executive	18.07	43.41	2.00	11.74
Lawyer	22.73	47.95	2.86	14.23
Linguist	15.23	38.18	1.61	9.79
Manager of Small Business	19.43	48.86	1.57	10.43
Market Research Specialist	18.75	43.64	2.07	10.77
Photographer	15.23	42.27	1.39	11.34
Physician	23.64	50.23	2.93	14.34
Plumber	17.73	41.59	1.00	7.64
Police Officer	13.52	43.18	1.32	7.00
Probation Officer	13.98	45.45	1.20	8.68
Salesman (Small Store)	10.91	37.50	.82	5.57
Sales Representative	18.52	46.14	1.86	11.00
Social Worker	13.07	43.86	1.20	9.57
State Senator	21.14	47.38	2.82	12.36
Stock Broker	19.89	43.18	1.95	11.23
T.V. Broadcaster	17.50	40.58	1.98	11.52

* Prestige ratings converted to the following scale: 0 = Below Ave.;
1 = Ave.;
2 = Above Ave.;
3 = High.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physician
lawyer
architect
college professor
state senator
foreign correspondent
advertising executive
judge
jr. executive
tv broadcaster
engineer
photographer
stock broker
sales representative
market research specialist
manager of small business
artist
high school counselor
linguist
social worker
farmer
high school teacher
probation officer
plumber
police officer
car salesman
salesman (small store)
0